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ENHANCED CARTON CORE FOR DIRECT PRINTING ON TEXTILES

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Enhanced carton core for Direct Printing on Textiles

Abstract

Our company heavily invests in R&D in order to have printers as versatile as possible and being able to print on almost all the different kind of materials (Papers, Self-Adhesive vinyls, Films, PVC Banners, Textiles…) in the case of the Latex printers and Transfer paper or Textiles in the case of the dye sublimation printers. During the last few years, the market trends are changing the usage of printing from PVC Banners to Textiles that is why the dye sublimation printers have been developed.

Textiles provide soft hand, great color pop and considered more premium than vinyl or paper so a higher value is perceived by the end customer. Moreover, textiles are lighter, wrinkle-free, easier to transport, mount and store that means that the shipment and storage costs drop. In addition, printing on textiles open a bigger range of applications that the customer can produce. Finally, the new regulations are limiting the use of the PVC so printing on textiles is becoming more and more relevant.

Printing on textiles is not an easy task for most of the printers that do not have a sticky belt (which is a very expensive solution) like the Latex and dye sublimation printers in the current portfolio. Due to the fact that the textiles are stretchable, are not easy to be stack to the core with a sticky tape or the dangerous that are the staples (that are easy to break and for the customer to get cut with them), the customers need to waste time trying to load the printer several times to get the best results in image quality because of the wrong tension, etc. In this disclosure we present an idea that will completely allow to the customer to print on textiles with the image quality they expect and without wasting time or putting themselves in danger. This idea takes advantage of the cores and the media loading accessory that the printers are actually using.

Problems Solved

It is well known that productivity, image quality and customer experience together with street price are some the key selling points that our company and all other competitors in the printing industry are constantly trying to improve.

Our company heavily invests in R&D in order to have printers as versatile as possible and being able to print on almost all the different kind of materials (Papers, Self-Adhesive vinyls, Films, PVC Banners, Textiles…) in the case of the Latex printers and Transfer paper or Textiles in the case of the dye sublimation printers. Printing on textiles is not an easy task for most of the printers that do not have a sticky belt (which is a very expensive solution) like the Latex and dye sublimation printers in the current portfolio. Typically, a roll to roll printer requires two carton cores, the one that comes with the material and the one that the customer need to put in the output to rewind the printed material.

Due to the fact that the textiles are stretchable, are not easy to be stack to the core with a sticky tape or the dangerous that are the staples (that are easy to break and for the customer to get cut with them), the customers need to waste time trying to load the printer several times to get the best results in image quality because of the wrong tension, etc. In this disclosure we present an idea that will completely allow to the customer to print on textiles with the image quality they expect and without wasting time or putting themselves in danger.

This idea takes advantage of the cores and the media loading accessory that the printers are actually using. By adding some magnets along the core the customer will be able to finish the media loading process just in one shot (not waiting in front of the printer to see if the media is well attached or not to the core) and avoiding in this way the several image quality issues related to the tensions and media advance problems, besides of the possible danger of the customer cutting himself/herself with broken staples with several uses.

Prior Solutions

To our knowledge, there are few inventions that are able to avoid the issue:

- A normal sticky tape – that is the one we are currently having the problem with
- Double-sided tape – it works with a limited number of textiles and the glue last few days, then it doesn't work anymore
- Sticky belt – Too expensive for low volume printers, for instance.
- Staples – they produce differences in tension with several materials and they are not easy to remove, many times they break when removing them (with a tool) being dangerous for the user if touches the core in the future and, finally, they damage the carton core, so the core requires to be changed continuously

Description

The solution is to use some pieces of plastic with magnets, similar to the ones we are currently using in the media loading accessories of the Latex or dyesub printers. When the media is loaded in the printer, the enhanced core is installed in the TUR (take up reel) in order to rewind the printed textile. The material is properly attached to the core with the magnets that guarantee: that the tension will be the same along the whole core and it prevents the movements of the textile when printing, rewinding, drying and during all the different process that the printers have.

Picture 1: Enhanced carton core already installed in the TUR.

Picture 2: The enhanced carton core is ready to receive the textile

Picture 3: First steps of the installation

Picture 4: The textile is attached to the core thanks to the magnets

Advantages

Although the advantages of our invention have already been described throughout this disclosure, the main takeaways are:

- Optimized media path for printing on textiles
    - This provides a huge benefit for our customers who will no longer run the risk of printing with poor image quality wasting material due to the reprints and the waste of time because of the different loading processes to get the right tensions.
- Our invention also provides a great benefit for our company as it will develop the solution with the current tools (without developing anything new)
- It will be a more expensive than a normal core but not a lot and it would be much cheaper than a sticky belt
- It could be sold as an accessory as well
- Reduction of mistakes in the media feed process
- Reduction of sudden unloads of the printer due to the processes of the printer
- Improvement on image quality
- This accessory will also help on safety (avoiding that the users can damage themselves) and it is environmental friendly, because it can reduce the use of many carton cores

Disclosed by Bruno da Silva & Raúl Vílchez, HP Inc.